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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/623,195	08/29/2000	Torbjorn Sandstrom	104-279P	9874

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EXAMINER
CHOI, WILLIAM C

ART UNIT	PAPER NUMBER
2873	

DATE MAILED: 07/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/623,195	Applicant(s) SANDSTROM, TORBJORN	
	Examiner William C. Choi	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-37 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-37 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 29 August 2000 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

Applicant's claim for domestic priority as a 371 of PCT/SE99/00310, is acknowledged. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

Receipt of the Information Disclosure Statements (IDS's) with the copies of the references cited therein, were received on 8/29/2000 and 6/26/2001. Initialized copies of the IDS's are enclosed with this office action.

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Objecti ns

Claims 2, 4, 7, 8, 10, 11, 20, 32 and 34 are objected to because of the following informalities: In claim 2, line 8, "polarisation" should be changed to "polarization"; in claim 4, line 2, claim 8, line 3 and claim 10, line 5, "linearisation" should be changed to "linearization"; in claim 7, line 4, "absorbtion" should be changed to "absorption"; in claim 10, line 4, "inpendently" should be changed to "independently"; in claim 11, line 7, "sexteen" should be changed to "sixteen"; in claim 20, line 2, "licuid" should be changed to "liquid"; in claim 32, line 3, "SLMis continuos" should be changed to "SLM is continuous"; in claim 34, line 2, "producing" should be changed to "produce". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Regarding claims 1 (and dependent claims 3-6, 8-10, 12-21, 23-25, 27, 28, 31 and 35-37), 2, 22, 26, 29, 30 and 32, the phrase "and preferably" renders the claims indefinite because it is unclear whether the limitation following phrase or preceding the phrase is part of the claimed invention (i.e claim 1: number of modulation states **larger than two** "and preferably" **larger than three**). For purposes of examination, the limitation preceeding the phrase was taken as the part of the claimed invention. Claims 3-21, 23-25, 27, 28, 31 and 33-37 inherit the indefiniteness of parent claim 1.

Regarding claims 7, 11 and 33, the phrases "for example" (i.e. "e.g.") and "such as" render the claims indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed inventions. See MPEP § 2173.05(d). For purposes of examination, the limitations were taken to be part of the claimed invention.

Regarding claim 34, the phrase "and/or" renders the claim indefinite because it is unclear whether the limitations before and after the phrase are both part of the claimed invention. For purposes of examination, the phrase was read in the alternative, "or".

Allowable Subject Matter

Claims 1-37 would be allowable if rewritten to overcome the objections and rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach a combination of all the claimed features as presented in claim 1: an apparatus as claimed specifically where the drive signals and the modulating elements are adapted to create a number of modulation states larger than two.

Prior Art Citations

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ju et al (U.S. 5,497,258) and Johnson et al (U.S. 5,073,010) are being cited herein to show light modulation apparatuses, which comprise some of the structural limitations of that of the claimed invention, but do not specifically disclose the

claimed number of modulation states. Sandstrom (U.S. 6,504,644 B1) is being cited herein to show an apparatus similar to that of the claimed invention, further wherein the intermediate modulation states are used for pixels along edges of pattern features and the design of the modulating elements and the exposure method are adapted to create a symmetry in the aperture stop as claimed, which distinguishes it from that of the present invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Choi whose telephone number is (703) 305-3100. The examiner can normally be reached on Monday-Friday from about 9:00 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (703) 308-4883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

W.C

William Choi
Patent Examiner
Art Unit 2873
June 27, 2003

Georgia Epps
Supervisory Patent Examiner
Technology Center 2800